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ABSTRACT

The idea that schooling socialization practices may influence students' self-regulated learning through their effects on attributions and perceived self-efficacy is discussed, focusing on students' beliefs about their abilities. From an attributional perspective, ability is generally viewed as a relatively fixed quality, but researchers have begun to identify different conceptions of ability. Although some students view ability in a fixed sense, others equate it with learning and hold an incremental view of it. Ability beliefs may influence perceived self-efficacy, which can affect motivation and skill acquisition. The theoretical bases of attribution theory, conceptions of ability, and self-efficacy are reviewed. Evidence from research is summarized to demonstrate how providing students with attributional feedback affects achievement beliefs and behaviors. Future research might address the process by which attributional feedback influences ability perceptions and self-regulated learning, and the developmental changes that occur in ability perceptions and their generality across school domains. A 32-item list of references is included. (SLD)

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# Socialization and the Development of Self-Regulated Learning: The Role of Attributions

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Abstract

This article discusses the idea that schooling socialization practices may influence students' self-regulated learning through their effects on attributions and perceived self-efficacy. I focus on students' beliefs about their abilities. From an attributional perspective, ability is generally viewed as a relatively fixed quality, but researchers have begun to identify different conceptions of ability. Though some students view ability in a fixed sense, others equate it with learning and hold an incremental view. Ability beliefs may influence perceived self-efficacy, which can affect motivation and skill acquisition. Following a theoretical overview of attribution theory, conceptions of ability, and self-efficacy, research evidence is presented on how providing students with attributional feedback affects achievement beliefs and behaviors. Future research might address the process whereby attributional feedback influences ability perceptions and self-regulated learning, and the developmental changes that occur in ability perceptions and their generality across school domains.

# Socialization and the Development of Self-Regulated Learning: The Role of Attributions

In this paper I discuss how schooling socialization practices can affect students' self-regulated learning. Self-regulated learning is learning that occurs from students' behaviors that are systematically oriented toward attainment of learning goals. Self-regulated learning processes involve goal-directed cognitive activities that students instigate, modify, and sustain (Zimmerman, 1989); for example, attending to instruction, processing and integrating knowledge, rehearsing information to be remembered, and developing and maintaining positive beliefs about learning capabilities (self-efficacy) and anticipated outcomes of actions (Schunk, 1989).

To focus this discussion I concentrate on the role of attributions, or learners' perceptions of the causes of their academic outcomes. I am especially concerned with students' perceptions of their abilities. This topic is important, because recent theoretical accounts of classroom learning and motivation view students as active seekers and processors of information rather than as passive recipients of knowledge imparted by teachers (Pintrich, Cross, Kozma, & McKeachie, 1986). Student, teacher, and contextual (instructional, social) factors can affect one another. There is growing evidence that personal cognitions influence the instigation, direction, and persistence of achievement behaviors. Various theoretical traditions place particular emphasis on individuals' beliefs concerning their capabilities to control important aspects of their lives (Bandura, 1986; Corno, 1989; Dweck & Leggett, 1988; Nicholls, 1984; Weiner, 1985).

I initially summarize theory on attributions, conceptions of ability, and self-efficacy. This discussion draws heavily from attribution theory (Weiner, 1985) and from social cognitive learning theory (Bandura, 1986). I focus on

one type of socialization practice: attributional feedback linking students' achievement outcomes with their abilities and efforts. Some research evidence is offered to support the idea that attributional feedback can impact students' ability perceptions, self-efficacy, and achievement behaviors. I conclude with suggestions for future research.

## Theoretical Background

### Attributions

People seek to explain the causes of important events in their lives (Heider, 1958; Weiner, 1985). In achievement settings, the search for causes results in such questions as, "Why did I do well (or poorly) on my social studies test?", and, "Why did I get an A (or a D) in biology?" Studies by Weiner and his colleagues provided the empirical base for developing an attributional theory of achievement behavior (Weiner, 1979, 1985; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971; Weiner, Graham, Taylor, & Meyer, 1983).

Guided by Heider's work, Weiner et al. (1971) postulated that students are likely to attribute their academic successes and failures to such factors as ability, effort, task difficulty, and luck. It is assumed that factors are given general weights and that for any outcome one or two factors will be perceived as primarily responsible. Other common attributions for academic outcomes are other people (teachers, peers), mood, fatigue, illness, personality, and physical appearance (Frieze, 1980; Frieze, Francis, & Hanusa, 1983).

Weiner et al. (1971) originally represented causes along two dimensions: internal or external to the individual, and relatively stable or unstable over time. Ability is internal/stable, effort is internal/unstable, task difficulty is external/stable, and luck is external/unstable. Weiner (1979)

added a third dimension--controllable or uncontrollable by the individual. Ability is uncontrollable; effort is controllable because it is under volitional control.

People use situational cues to form attributions. Salient cues for ability attributions are success attained easily or early in the course of learning, as well as many successes. Effort attributions are credible when students expend effort to succeed or persist for a long time. Task difficulty cues include task features (e.g., mathematical problems with more numbers are more difficult) and social norms (if everyone gets a low score, the test is difficult). A prominent cue for luck is random outcomes.

Attributions can affect students' expectations for success and achievement behaviors. The stability dimension is hypothesized to influence expectancy. Assuming that task conditions are expected to remain much the same, success ascribed to stable causes (high ability, low task difficulty) should result in higher expectations than attributions to unstable causes (high effort, good luck). Students may be uncertain whether they can sustain the effort needed to succeed or whether good luck will continue. Failure ascribed to low ability or high task difficulty is apt to result in lower expectations of success than failure attributed to insufficient effort or bad luck. Students may believe that increased effort will produce more favorable outcomes, or that luck may improve.

Conceptions of Ability

Although attribution theorists note that ability levels can fluctuate, ability is generally viewed as a relatively fixed quality of the individual (Weiner, 1979). Recent research, however, has identified individual differences in conceptions of ability, or personal beliefs about the characteristics of ability and the role it plays in achievement settings

(Meece, Blumenfeld, & Hoyle, 1988). These differences can affect students' self-regulated learning efforts.

Dweck and her colleagues have identified two conceptions of ability and have postulated differential effects in achievement contexts (Dweck, 1986; Dweck & Bempechat, 1983; Dweck & Leggett, 1988; Elliott & Dweck, 1988). Some students hold an entity (fixed) view of abilities. They believe their abilities are rather global and stable traits and that performance outcomes (successes, failures) are indicative of abilities. Other students hold an incremental (instrumental) view. They believe their abilities comprise skills and knowledge, and that abilities are improved as a function of experiences.

Students holding an entity view tend to pursue performance goals of gaining positive competence judgments and avoiding negative ones. They may perceive their abilities as high or low. Those with self-doubts about their learning abilities often work in lackadaisical fashion and expend little effort on difficult tasks. A concern with one's ability, coupled with self-doubts, leads to low ability attributions, negative affect, and performance deterioration. Those who believe they are capable of performing well often select tasks at which they can succeed, which produces judgments of competence from others. They persist longer and expend greater effort to succeed. In contrast, students holding an incremental view of abilities as acquirable skills strive to increase their competence via learning. Regardless of whether they view their abilities as high or low, they persist at tasks and expend effort because they believe effort can enhance ability.

This distinction bears similarity to the differences between task-involved and ego-involved students (Nicholls, 1983, 1984). Ego involvement is a type of self-preoccupation. Ego-involved students desire to avoid looking incompetent. Learning is not valued by itself but only as a

means to avoid appearing incapable. In contrast, task involvement stresses learning as a goal. Task-involved students "forget about themselves" and focus on task demands: solve the problem, balance the equation, write the book report.

Task and ego involvement reflect different beliefs about ability and effort (Jagacinski & Nicholls, 1984, 1987). Ego-involved students perceive ability as synonymous with capacity. Ability is relatively fixed and assessed by comparisons with others. The role of effort is limited; effort can improve performance only to the limit set by ability. Success achieved with effort implies high ability only if others require more effort for the same performance of if others perform less well with the same effort. Task-involved students perceive ability as close in meaning to learning; more effort can raise ability. Students feel more competent if they expend more effort to succeed, because learning implies greater ability. Feelings of competence arise when present performance is compared with prior performance and students believe they have improved.

There are important developmental changes in children's conceptions of ability and effort. Young children elide effort and ability as causes of outcomes (Nicholls & Miller, 1984). Higher ability implies trying hard and succeeding and higher effort implies higher ability. Ability, in other words, is roughly synonymous with learning through effort. This less-differentiated view is associated with task involvement. Effort and ability gradually become differentiated, and by the fifth or sixth grade many children hold an ability-as-capacity view where less effort needed to attain the same level of performance implies higher ability and effort can improve performance only up to the limit established by ability. By late elementary school most children implicitly understand both the entity and incremental ideas, but they

emphasize one or the other in their thinking about abilities (Dweck & Bempechat, 1983).

Self-Efficacy

According to Bandura (1986, 1988), self-regulation depends in part on individuals' goals and self-evaluations of progress. In educational settings, students receive cues that signal how well they are accomplishing their learning goals. Students evaluate their progress, and the belief they are acquiring skills enhances their perceived self-efficacy, or judgments of their capabilities to perform tasks at designated levels.

Self-efficacy is hypothesized to affect choice of activities, motivation (effort expenditure, persistence), and skill acquisition (Schunk, 1989). Students with low self-efficacy for accomplishing a task may avoid it; those who believe they are capable are more likely to participate. Especially when facing obstacles, students who believe they can perform well ought to work harder and persist longer than those who doubt their capabilities. Individuals acquire information to appraise their self-efficacy from their performance accomplishments, vicarious (observational) experiences, forms of persuasion, and physiological indexes (e.g., heart rate, sweating).

From an attributional perspective, students' self-efficacy and self-regulated learning can be tempered by their attributions. Students who attribute successes to their abilities and efforts are likely to feel efficacious about learning and engage in self-regulatory behaviors that further increase their skills. Self-regulated learning can be enhanced by providing students with attributional feedback that links their successes with their efforts and abilities. Attributional feedback is a persuasive source of self-efficacy information. To be told that one can achieve results through hard work can motivate one to do so because such information conveys that one

possesses the necessary capability to succeed (Andrews & Debus, 1978; Dweck, 1975). Providing effort feedback for prior successes supports students' perceptions of their progress in learning, sustains motivation, and increases efficacy for continued learning (Schunk, 1989). Providing students with ability feedback for successes also should convey progress and raise self-efficacy for learning.

## Research Evidence

Research in various domains is showing that conceptions of abilities can affect self-efficacy and self-regulatory behaviors. For example, Wood and Bandura (1989) found differences in goal setting and self-efficacy as a function of ability conceptions. Business school students participated in difficult managerial decision making in which they learned rules on ways to optimize employee performance using goals, feedback, and social rewards. Subjects were told the task represented either an acquirable skill (decision making is developed through practice) or a fixed entity (decision making reflects one's basic cognitive abilities). Subjects set goals for organizational productivity and judged self-efficacy for production levels ranging from 30% better to 40% worse than standard. Over trials, acquirable-skill subjects maintained high self-efficacy, set more challenging goals, demonstrated more efficient use of rules, and produced higher employee performances; entity subjects showed a decline in self-efficacy.

Attributional feedback might actually help foster an incremental conception of ability. Effort or ability feedback conveys that students are mastering learning goals and suggests that students can continue to improve their skills. By emphasizing that students have control over their learning outcomes, such feedback implies that abilities are not fixed but rather that learners can become more competent. We might expect attributional feedback to

alter not only students' attributions but also their beliefs about how much effort and ability can improve their learning capabilities.

In the remainder of this section I describe attributional feedback research that bears on many of these issues. These studies were conducted in the context of children's mathematical skill acquisition. Children received instruction and practice opportunities. Instructional sessions included independent practice, where differences in self-regulated learning can emerge. Work was self-paced and progress self-referenced. The feedback was linked with children's progress in skill acquisition. In many of these studies we assessed children's attributional beliefs. Though we did not measure conceptions of abilities, this research format may have encouraged an incremental view. By emphasizing self-comparisons and not allowing children opportunities to socially compare their work with that of peers, our procedures likely conveyed that children were capable of improving their competencies.

An early study compared the effects of different forms of effort attributional feedback (Schunk, 1982). Children participated in a subtractional instructional program over sessions and periodically received effort feedback. Some children's prior achievement was linked with effort (e.g., "You've been working hard"), other children's future achievement was linked with effort ("You need to work hard"), and those in a third condition did not receive effort feedback. Linking prior achievement with effort led to the highest posttest subtraction skill and self-efficacy, as well as motivation (measured by the rate of problem solving during the independent practice portions of the instructional sessions). These results support the idea that effort feedback can validate children's beliefs concerning their progress and convey that they are capable of further learning.

Using a similar methodology (Schunk, 1983), I compared the effects of ability and effort feedback. During a subtraction instructional program, children periodically received ability feedback for prior successes ("You're good at this"), effort feedback ("You've been working hard"), ability and effort (combined) feedback, or no feedback. Children who received only ability feedback demonstrated higher posttest self-efficacy and skill compared with the effort-only and the ability-plus-effort conditions. Children in the latter two conditions judged effort expenditure during the instructional sessions greater than did ability-only students. Children in the combined condition may have discounted some ability information in favor of effort. They might have wondered how well they were learning if they had to continue to work hard to succeed. Combined feedback may have implied lower ability than ability feedback alone.

I also have tested the idea that the sequence of attributional feedback influences achievement outcomes (Schunk, 1984). Early task successes constitute a prominent cue for formulating ability attributions. Feedback that links early successes with ability (e.g., "That's correct--you're really good at this") should enhance learning efficacy. Many times, however, effort feedback for early successes is more credible, because when students lack skills they must work hard to succeed. When students become more skillful, ability feedback may enhance self-efficacy better.

In this experiment, children lacking subtraction skills received instruction and solved problems over four sessions. One group of children periodically received ability feedback for successes, a second group received effort feedback, a third condition was given ability feedback during the first two sessions and effort feedback during the remaining sessions, and for a fourth condition this sequence was reversed. Providing ability feedback for

early successes, regardless of whether it was continued or children later received effort feedback, raised their ability attributions, self-efficacy and skills, significantly more than did effort feedback for early successes. The results support the idea that ability feedback can alter children's beliefs about the importance of ability as a cause of outcomes.

In 1986, Paula Cox and I explored how the sequence of effort feedback affected learning disabled students' motivation, self-efficacy, and subtraction skill (Schunk & Cox, 1986). Middle-school students lacking subtraction skills received instruction and solved problems over six sessions. One condition received effort feedback during the first three sessions, a second condition was given effort feedback during the last three sessions, and students in a third condition received no effort feedback. Each type of feedback promoted self-efficacy and skill better than no feedback; first-half feedback enhanced students' effort attributions. Given students' learning disabilities, effort feedback for early or later successes likely seemed credible, because students had to work hard to succeed. Over a longer period, however, time, effort feedback for successes on the same task could lose its effectiveness; as students become more skillful they might wonder why they still have to work hard. Students might infer that their abilities were fixed at low levels.

The final study investigated attributional feedback during reading comprehension instruction (Schunk & Rice, 1986). Children with comprehension deficiencies participated in a multi-session instructional program on identifying main ideas. In one condition (ability/ability), children periodically received ability feedback when they correctly answered comprehension questions, a second group (effort/effort) received effort feedback for correct answers, a third condition (ability/effort) was given

ability feedback during the first half of the instructional program and effort feedback during the second half, and for a fourth group this sequence was reversed (effort/ability).

Children who received ability feedback during the second half of the instructional program (ability/ability and effort/ability conditions) developed higher ability attributions and self-efficacy than subjects in the other conditions, but feedback sequence did not affect skill development. These results may differ from those of Schunk (1984) because of the type of subjects and the fact that this study was conducted over three times as many sessions. These remedial readers may have discounted early ability feedback because of their prior reading difficulties. Children also may have initially questioned the credibility of later ability feedback but such discounting likely ceased as students continued to succeed and began to believe they were becoming more competent. As ability feedback gained credibility, students began to formulate ability attributions and to develop higher self-efficacy for continued success.

## Implications for Research and Practice

The preceding research suggests a mechanism whereby self-regulated learning can be affected by the practice of delivering attributional feedback. As students work at academic activities, they assess their progress in accomplishing learning goals. Feedback linking progress with effort and ability makes these attributions highly salient to students and raises self-efficacy and skills. That students change their perceptions of ability as a cause of success implies that attributional feedback may help to develop an incremental conception of ability.

This idea is suggestive, and future research is needed on the process whereby attributional feedback and other educational practices might alter

ability beliefs. Researchers have postulated that a fixed conception may be enhanced by peer social comparisons, educational practices that order students on ability dimensions (e.g., grouping), and competition for a fixed number of rewards (grades, privileges). In contrast, an incremental view may be developed by goal setting and self-evaluation of progress (Dweck & Bempechat, 1983; Nicholls, 1983, 1984). Very promising research is emerging (Elliott & Dweck, 1988; Jagacinski & Nicholls, 1984; Meece et al., 1988), and I anticipate this will continue to be an active research area.

Research also is needed on how conceptions of ability relate to use of different self-regulatory mechanisms: setting goals, maintaining a sense of self-efficacy for goal attainment, evaluating goal progress, employing metacognitive activities (planning, monitoring, checking outcomes) (Bandura (1986, 1988; McCombs, 1988). Research should examine whether different conceptions of ability predict students' use of these strategies. Meece et al. (1988), for example, found that students who emphasized task-mastery goals reported higher levels of cognitive engagement in academic tasks. This type of research has important implications for educational practice.

A third research focus should be on developmental changes in ability conceptions and the extent to which these depend on schooling socialization practices. Children develop understanding of different views on ability and by the late elementary grades generally have a preferred view (Dweck & Bempechat, 1983; Nicholls, 1984). Research is needed on how socialization practices (at school, in the home, with peers) might interact with cognitive developmental influences to produce a preferred conception. Researchers also should examine the generality issue to determine the circumstances under which ability conceptions tend to be domain specific or cut across domains.

The procedures discussed in this article can be implemented easily by teachers. Attributional feedback while students are engaged in seatwork may help foster self-regulated learning practices. It is important that feedback be viewed as credible by students. Effort feedback for success at a task that students view as easy may lead them to believe that the teacher thinks they are low in ability (Weiner et al., 1983). Effort feedback is credible on tasks where more effort leads to better performance (e.g., improve one's grade by correcting homework or revising an assignment). Similarly, students may discount ability feedback after they have had to struggle to succeed. Ability feedback is credible when students learn quickly or perform well-established tasks. Teachers who attend carefully to students' learning cues can structure feedback accordingly and thereby enhance students' beliefs that their abilities can be improved and that they can improve them.

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